

## COMPILATION AND RUNTIME INFORMATION GENERATION AND OPTIMIZATION

## Abstract

3 To collect frequencies with which processes of a program are  
4 executed at high speed. A compiler apparatus for optimizing a  
5 program based on frequencies with which each process is  
6 executed has a loop process detection portion for detecting a  
7 repeatedly executed loop process of the program, a loop process  
8 frequency collection portion for collecting loop process  
9 frequencies with which the loop process is executed in the  
10 program, an in-loop process frequency collection portion for  
11 collecting in-loop process frequencies with which, as against  
12 times of execution of loop process, each of a plurality of  
13 in-loop processes included in the loop process is executed, an  
14 in-loop execution information generating portion for generating  
15 in-loop execution information indicating the frequencies with  
16 which each of the plurality of in-loop processes is executed in  
17 the case where the program is executed, and an optimization  
18 portion for optimizing the program based on the in-loop  
19 execution information.

## 20 Selected Drawing Figure 1